objects using a second method which is different from said first method, and for detecting an abnormality of at least one of the detector, a system for the first object and a system for the second object based on the temperature estimated by the first method and the temperature estimated by the second method,

A3 (cont.)

wherein the second object is an energizable object that generates heat upon an energization thereof, wherein said second object exhibits a temperature change in response to heat which is more rapid than a temperature change of the first object in response to heat, and wherein said second object is positioned in the vicinity of the first object for exchanging heat therebetween such that said second object assumes a temperature approximately equal to that of the first object in the absence of heat generation therein.

REMARKS

Favorable reconsideration of the present application is respectfully requested.

Claims 4-6 and 11-13 have been withdrawn from consideration. Claims 1-3 and 7-10 are active in the application.

A clear error in ¶ [0179] of the specification has been corrected. Basis for the correction is found at step S8 in Fig. 13.

Claims 1 and 8 have been amended to recite estimating (or an estimation portion for estimating) the temperature of the other of first and second objects using a first method, estimating the temperature of the other of the first and second objects using a second method which is different from said first method, and detecting an abnormality of at least one of the detector, a system for the first object and a system for the second object, based on the temperature estimated by the first method and the temperature estimated by the second method. Basis for the first and second methods of estimation limitation can be found in

paragraphs [0172] - [0179] and in steps S3-S8 of Fig. 13. Basis for the detecting of an abnormality of a system for the first and second objects limitation can be found at paragraph [0182].

As is described in the specification, one can detect the abnormality of a temperature detector (or a system such as a pump 402) for first and second objects, wherein the second object exhibits a temperature change in response to heat which is more rapid than a temperature change of the first object in response to heat, and wherein the second object is positioned in the vicinity of the first object for exchanging heat therebetween such that the second object assumes a temperature approximately equal to that of the first object in the absence of heat generation therein, by comparing temperatures resulting from using different first and second estimating methods for the temperature of the second object.

For example, referring to the non-limiting embodiments of the figures, and taking the ambient air and the cooling water to be the first and second objects, respectively, the water temperature Tw is estimated at step S3 in Fig. 13 when the motor torque is zero, by using equation (16) at ¶ [0160]. At step S4, the variation of the water temperature Tw' when the torques of the two motors are zero is estimated for an estimated initial value Tair of the outside ambient temperature by using equation (18) at ¶ [0176]. Then, at step S5, the outside ambient temperature Tair is modified so that these two estimated values of the water temperatures Tw, Tw' agree with each other. At step S6, it is examined whether or not the modified outside air temperature is in a predetermined range that is considered to be normal. If the modified outside ambient temperature Tair is not within the normal range, the driver is given a warning that the outside ambient temperature sensor (or another system such as the pump 402) is abnormal at step S8. Thus, an abnormality in the air temperature detector (or another system) is detected by using the two different methods of estimating the water

temperature.

Claims 1-3 and 8 were rejected under 35 U.S.C. § 102 as being anticipated by any one of the U.S. patents to Mori et al and Takeda, or DE '080. However, Applicant respectfully submits that the amended claims are patentable over any of these references.

Mori et al discloses a control apparatus for an internal combustion engine, together with use of an incremental fuel injection correction coefficient. However, there is no description or suggestion in Mori et al of the presently claimed method of estimating the temperature of the other of first and second objects using a first method on the basis of the temperature measured by the temperature determination portion and a specific value substantially indicating the amount of energization of the second object, estimating the temperature of the other of the first and second objects using a second method which is different from the first method, and detecting an abnormality of at least one of a temperature detector and a system for the first and second objects based on the temperature estimated by the first method and the temperature estimated by the second method.

Takeda discloses a control apparatus to prevent motor overload. It includes the estimation of the casing temperature Tc on the basis of a coolant temperature, but also has no teaching or suggestion of the presently claimed method of estimating the temperature of the other of first and second objects using a first method, estimating the temperature of the other of the first and second objects using a second method which is different from said first method, and detecting an abnormality of at least one of a temperature detector and a system for the first and second objects based on the temperature estimated by the first method and the temperature estimated by the second method.

DE '080 was published on August 17, 2000. Applicant will submit a certified English translation of its convention priority application filed on May 9, 2000, which is prior to the

date of publication of DE '080. It is therefore respectfully submitted that DE '080 is no longer prior art with respect to these claims.

In view of the failure of the prior art to teach the subject matter of amended Claims 1 and 8, the rejection of Claims 7 and 9-14 in ¶ 8 of the Office Action is believed to be moot.

Since Claim 1 remains generic to all of the embodiments, it is respectfully requested that the non-elected claims 4-6 and 11-13 be included in any patent issuing from the present application.

Applicant therefore believes that the present application is in a condition for allowance and respectfully solicits an early Notice of Allowability.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER AND NEUSTADT, P.C.

Norman F. Oblon
Registration No. 24,618
Attorney of Record
Robert T. Pous
Registration No. 29,099

22850

(703) 413-3000
(703) 413-2220 (fax)
NFO:RTP/bwt
I:\atty\RTP\205002us-am.wpd

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IN THE SPECIFICATION

Please amend the specification as follows:

--**[0179]** [On one hand, if] If the modified outside ambient temperature Tair is not within the normal range, the driver [has a] is given warning that the outside ambient temperature sensor is abnormal at step S8.--

IN THE CLAIMS

--1. (Amended) A method of estimating a temperature, comprising the steps of:

(a) specifying a first object;

(b) specifying an energizable second object that generates heat upon an energization thereof, wherein said second object exhibits a temperature change in response to heat which is more rapid than a temperature change of the first object in response to heat, and wherein said second object is positioned in the vicinity of the first object for exchanging heat therebetween such that said second object assumes a temperature approximately equal to that of the first object in the absence of heat generation therein;

(c) [determining] measuring the temperature of one of the first and second objects by a temperature detector; [and]

(d) estimating the temperature of the other of the first and second objects using a first

method in which the temperature of the other of the first and second objects is estimated on the basis of the temperature [determined] measured in the step (c) and a specific value that substantially indicates the amount of the energization of the second object;

(e) estimating the temperature of the other of the first and second objects using a second method which is different from said first method; and

(f) detecting an abnormality of at least one of the detector, a system for the first object and a system for the second object based on the temperature estimated by the first method and the temperature estimated by the second method.

8. (Amended) A temperature estimation device for estimating a temperature of one of first and the second objects from the temperature of the other object, comprising:

a temperature [determination] measuring portion for [determining] measuring the temperature of one of the first and second objects by a temperature detector; and

an estimation portion for estimating the temperature of the other of the first and second objects using a first method in which the temperature of the other of the first and second objects is estimated on the basis of the temperature [determined] measured by the temperature determination portion and a specific value substantially indicating the amount of energization of the second object, for estimating the temperature of the other of the first and second objects using a second method which is different from said first method, and for detecting an abnormality of at least one of the detector, a system for the first object and a system for the second object based on the temperature estimated by the first method and the temperature estimated by the second method,

wherein the second object is an energizable object that generates heat upon an energization thereof, wherein said second object exhibits a temperature change in response to heat which is more rapid than a temperature change of the first object in response to heat, and

wherein said second object is positioned in the vicinity of the first object for exchanging heat therebetween such that said second object assumes a temperature approximately equal to that of the first object in the absence of heat generation therein.